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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,312	07/26/2006	Nam-Chon Paek	4240-145	1925
23448	7590	04/05/2010	EXAMINER	
INTELLECTUAL PROPERTY / TECHNOLOGY LAW PO BOX 14329 RESEARCH TRIANGLE PARK, NC 27709				KALLIS, RUSSELL
ART UNIT		PAPER NUMBER		
1638				
MAIL DATE		DELIVERY MODE		
04/05/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,312	PAEK ET AL.	
	Examiner	Art Unit	
	RUSSELL KALLIS	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 21 December 2009.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 4-35 is/are pending in the application.
 4a) Of the above claim(s) 5 and 9-35 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,4 and 6-8 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Claims 1, and 4-35 are pending. Claims 5 and 9-35 are withdrawn. Claims 1, 4 and 6-8 are examined. The rejection under 112 1st enablement is withdrawn.

Applicants election of SEQ ID NO: 1 and 30 was not an election of species. Applicant is directed to the restriction where it is stated as such. Applicants' request for rejoinder is noted.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4 and 6-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. THIS IS A NEW MATTER REJECTION.

The added claimed material which is not supported by the original disclosure is as follows: Amended Claims 1 and 4 recite A SGR gene encoding a polypeptide having at least 60% homology with region 49-207 of SEQ ID NO: 30, wherein the sequence is selected from the group consisting of SEQ ID NOs 30 to 58, while the specification only supports SEQ ID NOs 30-50 and 57. Further, the specification indicates that SEQ ID NO:s 51-56 and 58 are partial sequences that are missing significant portions of the claimed region homologous to amino acid residues 49-207 of SEQ ID NO: 30. Thus, the claims are drawn to NEW MATTER. Applicant is invited to point to the page and line

number in the specification where support can be found. Absent of such support,

Applicant is required to cancel the new matter in the reply to this Office Action.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4 and 6-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation at least 60% homology to amino acids 49-207 of SEQ ID NO: 30, and the claim also recites wherein the SGR gene encodes a polypeptide presented by the amino acid sequence selected from the group consisting of SEQ ID NO: 30-58 which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4 and 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada, K. *et al.* GenBank GI:17380888; 18 September 2002 in light of Ren *et al.* Plant Physiology 2007 Jul;144(3):1429-41.

The claims are broadly drawn to any encoded protein sequence having at least 60% sequence identity to SEQ ID NO: 30 over the region of amino acid residues 49-207.

Yamada teaches an Arabidopsis open reading frame encoding a protein having at least 79% sequence identity to SEQ ID NO: 30 over the region of amino acid residues 49-207 when viewed with the evidence of Ren that reveals a stay green protein also known as NYE1; wherein the isolated DNA was cloned into a recombinant DNA vector and host microorganism.

LOCUS	AAL36256	268 aa	linear	PLN 18-SEP-2002
DEFINITION	unknown protein [Arabidopsis thaliana].			
ACCESSION	AAL36256			
VERSION	AAL36256.1	GI:17380888		
DBSOURCE	accession AY063900.1			
KEYWORDS				
SOURCE	Arabidopsis thaliana (thale cress)			
ORGANISM	Arabidopsis thaliana			
	Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;			
	Spermatophyta; Magnoliophyta; eudicots; core eudicots;			
	rosids; malvids; Brassicales; Brassicaceae; Arabidopsis.			
REFERENCE	1 (residues 1 to 268)			
AUTHORS	Yamada,K., Liu,S.X., Sakano,H., Pham,P.K., Banh,J., Chung,M.K., Goldsmith,A.D., Lee,J.M., Quach,H.L., Toriumi,M., Yu,G., Bowser,L., Carninci,P., Chen,H., Cheuk,R., Hayashizaki,Y., Ishida,J., Jones,T., Kamiya,A., Karlin-Neumann,G., Kawai,J., Kim,C., Lam,B., Lin,J., Miranda,M., Narusaka,M., Nguyen,M., Palm,C.J., Sakurai,T., Satou,M., Seki,M., Shinn,P., Southwick,A., Shinozaki,K., Davis,R.W., Ecker,J.R. and Theologis,A.			
TITLE	Arabidopsis Full Length cDNA Clones			

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JOURNAL Unpublished
 REFERENCE 2 (residues 1 to 268)
 AUTHORS Yamada,K., Banh,J., Banno,F., Chang,E., Dale,J.M., Goldsmith,A.D.,
 Lee,J.M., Onodera,C.S., Quach,H.L., Tang,C.C., Toriumi,M., Wu,H.C.,
 Yamamura,Y., Yu,G., Yu,S., Bowser,L., Carninci,P., Chen,H.,
 Cheuk,R., Hayashizaki,Y., Ishida,J., Jones,T., Kamiya,A.,
 Karlin-Neumann,G., Kawai,J., Kim,C., Koesema,E., Lam,B., Lin,J.,
 Meyers,M.C., Miranda,M., Narusaka,M., Nguyen,M., Palm,C.J.,
 Sakurai,T., Satou,M., Seki,M., Shinn,P., Southwick,A.,
 Shinozaki,K., Davis,R.W., Ecker,J.R. and Theologis,A.

TITLE Direct Submission
 JOURNAL Submitted (19-NOV-2001) Plant Gene Expression Center, 800 Buchanan
 Street, Albany, CA 94710, USA

COMMENT RIKEN Genomic Sciences Center (GSC) members carried out the
 collection and clustering of RAFL cDNAs (RAFL cDNA : 'RIKEN
 Arabidopsis Full-Length cDNA'): Seki,M., Narusaka,M., Ishida,J.,
 Satou,M., Kamiya,A., Sakurai,T., Carninci,P., Kawai,J.,
 Hayashizaki,Y. and Shinozaki,K.

The Salk, Stanford, PGEC (SSP) Consortium members carried out the
 sequencing and annotation of the RAFL cDNAs: Yamada,K., Banh,J.,
 Banno,F., Chang,E., Dale,J.M., Goldsmith,A.D., Lee,J.M.,
 Onodera,C.S., Quach,H.L., Tang,C.C., Toriumi,M., Wu,H.C.,
 Yamamura,Y., Yu,G., Yu,S., Bowser,L., Chen,H., Cheuk,R., Jones,T.,
 Karlin-Neumann,G., Kim,C., Koesema,E., Lam,B., Lin,J., Meyers,M.C.,
 Miranda,M., Nguyen,M., Palm,C.J., Shinn,P., Southwick,A.,
 Davis,R.W., Ecker,J.R. and Theologis,A.

Yamada,K. (SSP/PGEC) and Seki,M. (RIKEN GSC) contributed equally to
 this work. Shinozaki,K. (RIKEN GSC) and Theologis,A. (SSP/PGEC)
 contributed equally to this work as PIs.

Annotation is based on the January 2002 version of the Arabidopsis
 genome submitted to GenBank.

Method: conceptual translation.

FEATURES	Location/Qualifiers
source	1..268 <i>/organism="Arabidopsis thaliana"</i> <i>/db_xref="taxon:3702 "</i> <i>/chromosome="4"</i> <i>/clone="RAFL09-26-D14 (R18417)"</i> <i>/ecotype="Columbia"</i> <i>/note="This clone is in a modified pBluescript vector (FLC-1) as a BamHI/XhoI insert."</i>
Protein	1..268 <i>/product="unknown protein"</i>
CDS	1..268 <i>/gene="At4g22920"</i> <i>/coded_by="AY063900.1:150..956"</i> <i>/experiment="experimental evidence, no additional details recorded"</i>

ORIGIN

```

1 mcslsaimll ptklkpaysd krsnssssss lffnnrrskk knqsivpvar lfgpaifess
61 klkvflgvd ekkhpstlpr tytlthsdit akltlaisqs innsqlqgwa nrlyrdevva
121 ewkkvkgkms 1hvhchisgg hflldlfakf ryfifckelp vvlkafvhgd gnllnnypel
181 qealvwvyfh snvnefnkve cwgplweavs pdghktetlp earcadecsc cfptvssipw
241 shslnegvn gysgtqtegi atpnpekl

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RESULT 25
O82741_ARATH
ID O82741_ARATH Unreviewed; 268 AA.
AC O82741;
DT 01-NOV-1998, integrated into UniProtKB/TREMBL.
DT 01-NOV-1998, sequence version 1.
DT 24-NOV-2009, entry version 48.
DE SubName: Full=Putative uncharacterized protein F7H19.100;
DE SubName: Full=Non-yellowing protein 1;
DE SubName: Full=Putative uncharacterized protein AT4g22920;
DE SubName: Full=Putative uncharacterized protein At4g22920;
DE SubName: Full=Senescence-inducible chloroplast stay-green protein 1;
GN Name=F7H19.100; Synonyms=AT4g22920, NYE1, SGN1;
GN OrderedLocusNames=At4g22920;
OS Arabidopsis thaliana (Mouse-ear cress).
OC Eukaryota; Viriplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
OC rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
OX NCBI_TaxID=3702;
RN [1]
RP NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
RC STRAIN=cv. Columbia;
RX MEDLINE=20083488; PubMed=10617198; DOI=10.1038/47134;
RA Mayer K.F.X., Schueler C., Wambutt R., Murphy G., Volckaert G.,
RA Pohl T., Duesterhoeft A., Stiekema W., Entian K.-D., Terryn N.,
RA Harris B., Ansorge W., Brandt P., Grivell L.A., Rieger M.,
RA Weichselgartner M., de Simone V., Obermaier B., Mache R., Mueller M.,
RA Kreis M., Delseney M., Puigdomenech P., Watson M., Schmidtheini T.,
RA Reichert B., Portetelle D., Perez-Alonso M., Boutry M., Bancroft I.,
RA Vos P., Hoheisel J., Zimmermann W., Wedler H., Ridley P.,
RA Langham S.-A., McCullagh B., Bilham L., Robben J.,
RA van der Schueren J., Grymonprez B., Chuang Y.-J., Vandenbussche F.,
RA Braeken M., Weltjens I., Voet M., Bastiaens I., Aert R., Defoor E.,
RA Weitzenerger T., Bothe G., Ramsperger U., Hilbert H., Braun M.,
RA Holzer E., Brandt A., Peters S., van Staveren M., Dirkse W.,
RA Mooijman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Berneiser S., Hempel S., Feldpausch M., Lamberth S., Van den Daele H.,
RA De Keyser A., Buysshaert C., Gielen J., Villarroel R., De Clercq R.,
RA van Montagu M., Rogers J., Cronin A., Quail M.A., Bray-Allen S.,
RA Clark L., Doggett J., Hall S., Kay M., Lennard N., McLay K., Mayes R.,
RA Pettett A., Rajandream M.A., Lyne M., Benes V., Rechmann S.,
RA Borkova D., Bloecker H., Scharfe M., Grimm M., Loehnert T.-H.,
RA Dose S., de Haan M., Maarse A.C., Schaefer M., Mueller-Auer S.,
RA Gabel C., Fuchs M., Fartmann B., Granderath K., Dauner D., Herzl A.,
RA Neumann S., Argiriou A., Vitale D., Liguori R., Piravandi E.,
RA Massenet O., Quigley F., Clabauld G., Muendlein A., Felber R.,
RA Schnabl S., Hiller R., Schmidt W., Lecharny A., Aubourg S.,
RA Chefdeville F., Cooke R., Berger C., Monfort A., Casacuberta E.,
RA Gibbons T., Weber N., Vandembol M., Bargues M., Terol J., Torres A.,
RA Perez-Perez A., Purnelle B., Bent E., Johnson S., Tacon D., Jesse T.,
RA Heijnen L., Schwarz S., Scholler P., Heber S., Francs P., Bielke C.,
RA Frishman D., Haase D., Lemcke K., Mewes H.-W., Stocker S.,
RA Zaccaria P., Bevan M., Wilson R.K., de la Bastide M., Habermann K.,
RA Parnell L., Dedhia N., Gnoj L., Schutz K., Huang E., Spiegel L.,
RA Sekhon M., Murray J., Sheet P., Cordes M., Abu-Threideh J.,
RA Stoneking T., Kalicki J., Graves T., Harmon G., Edwards J.,
RA Latreille P., Courtney L., Cloud J., Abbott A., Scott K., Johnson D.,
RA Minx P., Bentley D., Fulton B., Miller N., Greco T., Kemp K.,
RA Kramer J., Fulton L., Mardis E., Dante M., Pepin K., Hillier L.W.,
RA Nelson J., Spieth J., Ryan E., Andrews S., Geisel C., Layman D.,
RA Du H., Ali J., Berghoff A., Jones K., Drone K., Cotton M., Joshu C.,
RA Antoniou B., Zidanic M., Strong C., Sun H., Lamar B., Yordan C.,

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RA Ma P., Zhong J., Preston R., Vil D., Shekher M., Matero A., Shah R.,
RA Swaby I.K., O'Shaughnessy A., Rodriguez M., Hoffman J., Till S.,
RA Granat S., Shohdy N., Hasegawa A., Hameed A., Lodhi M., Johnson A.,
RA Chen E., Marra M.A., Martienssen R., McCombie W.R.;
RT "Sequence and analysis of chromosome 4 of the plant *Arabidopsis*
RT *thaliana*.";
RL Nature 402:769-777(1999).
RN [2]
RP NUCLEOTIDE SEQUENCE.
RX PubMed=17468209; DOI=10.1104/pp.107.100172;
RA Ren G., An K., Liao Y., Zhou X., Cao Y., Zhao H., Ge X., Kuai B.;
RT "Identification of a Novel Chloroplast Protein AtNYE1 Regulating
RT Chlorophyll Degradation during Leaf Senescence in *Arabidopsis*.";
RL Plant Physiol. 144:1429-1441(2007).
RN [3]
RP NUCLEOTIDE SEQUENCE.
RX PubMed=17513504; DOI=10.1105/tpc.106.044891;
RA Park S.Y., Yu J.W., Park J.S., Li J., Yoo S.C., Lee N.Y., Lee S.K.,
RA Jeong S.W., Seo H.S., Koh H.J., Jeon J.S., Park Y.I., Paek N.C.;
RT "The senescence-induced staygreen protein regulates chlorophyll
RT degradation.";
RL Plant Cell 19:1649-1664(2007).
RN [4]
RP NUCLEOTIDE SEQUENCE.
RA Paek N.-C.;
RL Submitted (DEC-2004) to the EMBL/GenBank/DDBJ databases.
RN [5]
RP NUCLEOTIDE SEQUENCE.
RA Yamada K., Banh J., Chan M.M., Chang C.H., Chang E., Dale J.M.,
RA Deng J.M., Goldsmith A.D., Lee J.M., Onodera C.S., Quach H.L.,
RA Tang C., Toriumi M., Wu H.C., Yamamura Y., Yu G., Bowser L.,
RA Carninci P., Chen H., Cheuk R., Hayashizaki Y., Ishida J., Jones T.,
RA Kamiya A., Karlin-Neumann G., Kawai J., Kim C., Lam B., Lin J.,
RA Meyers M.C., Miranda M., Narusaka M., Nguyen M., Palm C.J.,
RA Sakurai T., Satou M., Seki M., Shinn P., Southwick A., Shinozaki K.,
RA Davis R.W., Ecker J.R., Theologis A.;
RT "Arabidopsis Open Reading Frame (ORF) Clones.";
RL Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.
RN [6]
RP NUCLEOTIDE SEQUENCE.
RA Yamada K., Liu S.X., Sakano H., Pham P.K., Banh J., Chung M.K.,
RA Goldsmith A.D., Lee J.M., Quach H.L., Toriumi M., Yu G., Bowser L.,
RA Carninci P., Chen H., Cheuk R., Hayashizaki Y., Ishida J., Jones T.,
RA Kamiya A., Karlin-Neumann G., Kawai J., Kim C., Lam B., Lin J.,
RA Miranda M., Narusaka M., Nguyen M., Palm C.J., Sakurai T., Satou M.,
RA Seki M., Shinn P., Southwick A., Shinozaki K., Davis R.W., Ecker J.R.,
RA Theologis A.;
RT "Arabidopsis Full Length cDNA Clones.";
RL Submitted (NOV-2001) to the EMBL/GenBank/DDBJ databases.
RN [7]
RP NUCLEOTIDE SEQUENCE.
RA Peters S.A., van Staveren M., Dirkse W., Stiekema W., Mewes H.W.,
RA Lemcke K., Mayer K.F.X.;
RL Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
RN [8]
RP NUCLEOTIDE SEQUENCE.
RA EU Arabidopsis sequencing project;
RL Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
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CC -----

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DR EMBL; AY063900; AAL36256.1; -; mRNA.
DR EMBL; AY096504; AAM20154.1; -; mRNA.
DR EMBL; AY850161; AAW82962.1; -; mRNA.
DR EMBL; DQ437531; ABD77557.1; -; mRNA.
DR EMBL; AL031018; CAA19807.1; -; Genomic_DNA.
DR EMBL; AL161558; CAB79247.1; -; Genomic_DNA.
DR IPI; IPI00529577; -.
DR PIR; T05123; T05123.
DR RefSeq; NP_567673.1; -.
DR UniGene; At.27150; -.
DR GeneID; 828391; -.
DR GenomeReviews; CT486007_GR; AT4G22920.
DR KEGG; ath:AT4G22920; -.
DR NMPDR; fig|3702.1.peg.20156; -.
DR TAIR; At4g22920; -.
DR OMA; AVSHTIN; -.
DR PhylomeDB; O82741; -.
DR Genevestigator; O82741; -.
DR GO; GO:0015996; P:chlorophyll catabolic process; IMP:TAIR.
PE 2: Evidence at transcript level;
KW Complete proteome.
SQ SEQUENCE 268 AA; 30052 MW; 1B3F128F18EA79B2 CRC64;

Query Match 78.9%; Score 677; DB 2; Length 268;
Best Local Similarity 78.6%;
Matches 125; Conservative 15; Mismatches 17; Indels 2; Gaps 1;

Qy 1 ARLFGPAIFEASKLKVLFLGVDEEKHQHPGKLPRTYTLTHSDVTARLTLAVSHTINRAQL 60
Db 49 ARLFGPAIFESSKLKVLFLGVDEKK--HPSTLPRTYTLTHSDITAKLTIAISQSINNSQL 106

Qy 61 QGWYNKLQRDEVVAEWKKVQGHMSLHVHCHISGGHVLLDLIAGLRYYIFRKELPVVLKAF 120
Db 107 QGWANRLYRDEVVAEWKKVKKGKMSLHVHCHISGGHFLLDILFAKFYFIFCKELPVVLKAF 166

Qy 121 VHGDGNLFSRHPELEEATWVVFHSNLPRFNRVECWGPL 159
Db 167 VHGDGNLLNNYPELQEALVVVFHSNVNEFNKVECWGPL 205

No claim is allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to RUSSELL KALLIS whose telephone number is (571)272-0798. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Russell Kallis/
Primary Examiner, Art Unit 1638
March 24, 2010